Hospitalizations Associated with Seasonal Influenza — Kanawha County, 2008–2009

Rachel Radcliffe, DVM, MPH[1,2], Dee Bixler, MD, MPH[2]

[1] Epidemic Intelligence Service, Centers for Disease Control and Prevention, [2] West Virginia Department of Health and Human Resources

Impact of Seasonal Influenza

- >200,000 hospitalizations annually
- 36,000 deaths annually
- Persons most severely affected
  - ≥65 years old
  - <2 years old
  - High risk medical conditions

Importance of Hospitalization Data

- Determine high-risk groups
  - Vaccine recommendations
  - Treatment and prophylaxis recommendations
- Public communications
- Community mitigation recommendations

Study Objectives

- Describe hospitalized influenza cases:
  - Demographics
  - Comorbidities
  - Complications
  - Mortality
  - Vaccination status
  - Antiviral Treatment
- Estimate hospitalization rate for seasonal influenza among Kanawha county residents
- Estimate the hospitalization rate for Kanawha county residents with diabetes
- Establish baseline expected rates of hospitalization in Kanawha county
- Test ability to rapidly and accurately collect data in a pandemic situation
- Establish inter-observer reliability for key variables

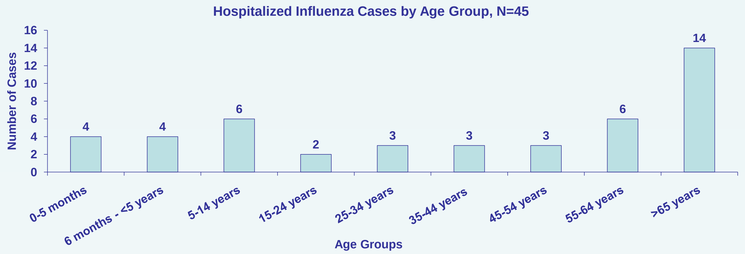
Methods

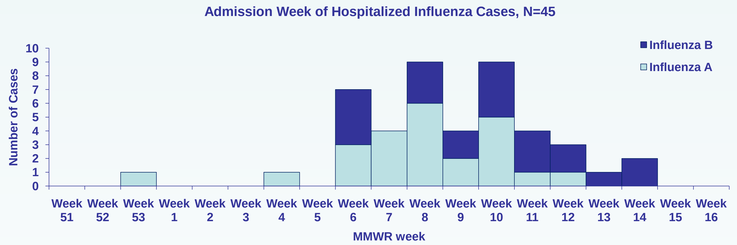
- Developed and pre-tested data collection form specific to each hospital in Kanawha county
- Trained team for data collection
- Chart review performed at hospitals in Kanawha county
- Inclusion criteria
  - Kanawha county resident
  - Positive influenza test during or immediately prior to hospitalization
  - Hospitalized at CAMC, Thomas, St. Francis
  - Dates of hospitalization between October 1, 2008–May 1, 2009
- Double review by independent reviewer

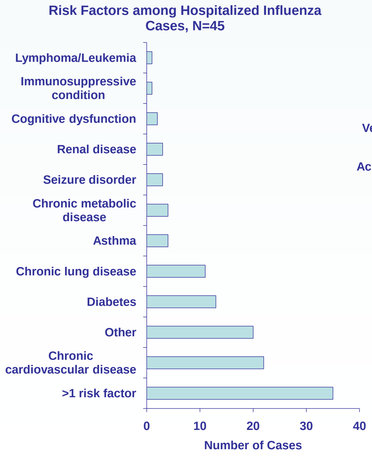
Results

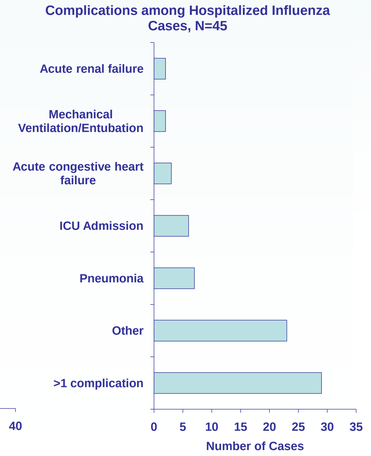
- 46 Kanawha county residents hospitalized during study period
  - Completed chart review – 45 (98%)
  - Completed double review – 41 (89%)
  - Kanawha county hospitalization rate
    - 24.1 per 100,000 population

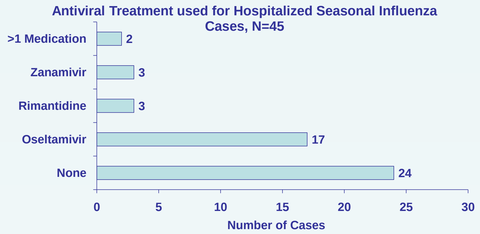
Demographic	Number	Proportion (%)
Male	25	56
Female	20	44
White Race	37	82
Black Race	6	13
Unknown Race	2	4











Outcome

- Length of Hospital Stay
  - Range =0-17 days
  - Mean=3.4 days
  - Median=2 days
- No deaths

Inter-Observer Reliability Study, n=41

Variable	Percent Agreement
Test result	100%
Outcome	100%
Complications – ICU Admission	100%
Date of Birth	98%
Admission date	95%
Risk Factor – Diabetes	95%
Specimen Collection Date	83%
Vaccination status	76%

Limitations

- 100% of records not double-reviewed
- Low inter-observer reliability for vaccination status

Conclusions

- Most hospitalizations occurred among ≥65 years old
- Peak hospitalizations occurred during week 8 and week 10
- Oseltamivir most frequently prescribed antiviral; zanamivir infrequently prescribed
  - National data showed high proportion of influenza A viruses resistant to oseltamivir
  - Influenza A viruses are more prevalent than Influenza B viruses according to WV state data
  - Zanamivir is the preferred medication recommended by CDC for treatment of Influenza A
- Good inter-observer reliability among most key variables
- Chronic cardiovascular disease and diabetes most common risk factors

Acknowledgements

- Deanna Samms, BS, MA, CIC (CAMC)
- Leslie Blackhurst, RN, CIC (St. Francis)
- Sarah McClanahan, RN, MSN (Thomas)
- Data Collection Team Members (WVBPH)
  - Carolyn Winkler, RN
  - Kaluwa Schoen, RN
  - Robin Brock, RN
  - Dee Bixler, MD, MPH
  - Rachel Radcliffe, DVM, MPH